Clinical result of plate fixation for calcaneal fractures in elderly patients

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My disclosure is in the Final AOFAS Mobile App.
I have no potential conflicts with this presentation.
Introduction

The problem of the treatment of calcaneal fractures in the elderly patients is Decline in walking ability due to long-term non-weight bearing.

Our Plate fixation Concept for Sanders Type II - IV calcaneal fractures

- In order to achieve anatomical reduction and rigid primary fixation, we have been treated with a plate
- We are using the locking plate from April 2011 for early weight-bearing

Purpose

To examine the outcome of osteosynthesis with a plate for elderly calcaneal fractures in our hospital.
## Material & Method

<table>
<thead>
<tr>
<th></th>
<th>Younger group (60y.o. &gt;)</th>
<th>Elderly group (60y.o. ≤)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male : Female</td>
<td>10 : 1</td>
<td>5 : 5</td>
</tr>
<tr>
<td>Mean age</td>
<td>48 (38-56)</td>
<td>71 (61-84)</td>
</tr>
<tr>
<td>Follow up (month)</td>
<td>10.5 (6-13)</td>
<td>12.1 (5-24)</td>
</tr>
</tbody>
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Follow up: Apr. 2011 〜: Locking Plate System

- The number of days until partial or full weight-bearing
- Böhler angle, calcaneus axial index
- Maxfield criteria
- AOFAS Ankle-Hindfoot Scale

n = 22 feet (21 patients)
The Sanders classification of intraarticular fractures of the calcaneus
1. We used a lateral small L-shaped approach to expose the calcaneal wall.

2. After reduction the displaced fragment, we transplanted into the gap β-TCP.

3. To reduction the lateral wall, we used a compression devise.

4. Plate fixation

**P.O.1 day~:** ankle ROM ex. & non-weight gait ex.
(no cast)

**P.O.2 or 3 weeks~:** partial weight bearing with walking boots
(depending on the pain)

**P.O.4-6 weeks~:** full weight bearing
(depending on the pain)
Result

The number of days until weight-bearing

N.S.

PWB

FWB

27
23.6

53
43.2

younger
elderly
**Result**

**Böhler angle**

- Pre OP: Younger -3.9, Elderly 5.2
- Post OP: Younger 25.6, Elderly 23.9
- Final FU: Younger 17.9, Elderly 16.9

* p<0.05

**Calcaneus axial index**

- Pre OP: Younger 37.8, Elderly 36.4
- Post OP: Younger 12.2, Elderly 8.5
- Final FU: Younger 14.3, Elderly 14.0

N.S.
Result

Maxfield criteria

N.S.

AOFAS scale

N.S.
Discussion

Calcaneal fractures in elderly patients

- It is easy to fracture with low energy because of osteoporosis
- It is difficult to obtain a rigid initial fixation because of comminuted fracture
- It is difficult to limit the weight bearing

Decline in walking ability due to long-term non-weight bearing is a problem.

Retrospective review of the outcome of operative management of intra-articular calcaneal fractures in patients who were sixty-five years of age or older. Mean AOFAS score of 82.4 points was reported in thirty-five patients at an average of forty-four months.

The study examined early weight bearing of calcaneal fractures fixated with locked plating. The average time the patient was kept non-weight bearing after the procedure was 4.8 weeks. Under radiographic review, there were no cases significant bone subsidence or collapse noted.

Early weight-bearing is possible as well as young patients even in the elderly by rigid initial fixation.
Conclusion

- We have been treated with a plate for intra-articular calcaneal fractures, and compared the outcome of elderly group and the younger group.

- It was possible to obtain a good outcome and early weight-bearing in the elderly group by anatomical reduction and rigid plate fixation.


